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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,480	05/10/2005	Thomas Durbaum	DE02 0261 US	7009
65913	7590	02/05/2010	EXAMINER	
NXP, B.V. NXP INTELLECTUAL PROPERTY & LICENSING M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			PHAM, EMILY P	
			ART UNIT	PAPER NUMBER
			2838	
			NOTIFICATION DATE	DELIVERY MODE
			02/05/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No. 10/534,480	Applicant(s) DURBAUM ET AL.	
	Examiner Emily Pham	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 5/10/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

REOPENING OF PROSECUTION AFTER APPEAL BRIEF

1. In view of the Appeal Brief filed on 11/10/2009, PRESECUTION IS HEREBY REOPENED. New grounds of rejections are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increase fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 5-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Mao et al (USP 6,037,755).

Regarding independent claim 1: Mao et al (**For example: see FIG 1-FIG 5**) discloses power converter comprising: a current path that includes an inductor (**L**) having an input for receiving energy from a power supply (**Vin**) and an output capacitor (**Co**) for providing an output voltage (**Vout**); an additional current path (**path with Q2**), beginning at an output of the inductor (**L**) and including a circuit element (**Q2**) configured to open and close the additional current path (**path with Q2**), said additional current path (**path with Q2**) formed such that a current flowing through said additional current path (**path with Q2**) reaches basically immediately a desired value, when said additional current path (**path with Q2**) is opened; a first switch (**Q1**) coupled between

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the power supply (**V_{in}**) and the inductor (**L**), the first switch (**Q1**) configured to provide the energy from the power supply (**V_{in}**) to the inductor (**L**); and a feedback circuit (**210, 220**) configured to control the a circuit element (**Q2**) to open said additional current path (**path with Q2**), when said output voltage (**V_{out}**) across said output capacitor (**Co**) reaches a predetermined maximum value (**V_{in}**), wherein the inductor (**L**) provides the energy from the power supply (**V_{in}**) to a parallel arrangement of the output capacitor (**Co**) and the additional current path (**path with Q2**).

Regarding claim 5: Mao et al (**For example: see FIG 1-FIG 5**) discloses power converter, wherein said feedback circuit (**210, 220**) configured to control the circuit element (**Q2**) to open said additional current path (**path of Q2**) for a predetermined time (**FIG 3A-3D; fixed duration pulse from pulse circuit 230 to the circuit element Q2**).

Regarding claim 6: Mao et al (**For example: see FIG 1-FIG 5**) discloses power converter, wherein said feedback circuit (**210, 220**) is configured to control the circuit element (**Q2**) to close additional current path (**path of Q2**) when a second predetermined output voltage is reached (**FIG 5: Q2 is off for buck mode scheme; lines 34-47 of col. 6**).

Regarding claim 7: Mao et al (**For example: see FIG 1-FIG 5**) discloses power converter, wherein said feedback circuit (**210, 220**) is configured to control the circuit element (**Q2**) to open and close the additional current path (**path of Q2**) based on said output voltage (**V_{out}**) (**FIG 5**).

Regarding claim 8: Mao et al (**For example: see FIG 1-FIG 5**) discloses power converter, wherein said feedback circuit (**210, 220**) is configured to control the circuit

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element **(Q2)** to open and close additional current path **(path of Q2)** based on a current through said inductor **(L)**.

(Note: It has been held that the recitation that an element is "configured to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense.)

Regarding claim 9: Mao et al **(For example: see FIG 1-FIG 5)** discloses power converter, wherein said power converter is one out of a group of a buck converter, a boost converter and a buck/boost converter **(lines 23-32 of col. 2)**.

Regarding claim 16: Mao et al **(For example: see FIG 1-FIG 5)** discloses power converter wherein the circuit element is a controllable element **(Q2)** for opening and closing the additional current path **(path of Q2)**.

Regarding claim 17: Mao et al **(For example: see FIG 1-FIG 5)** discloses power converter further comprising a second switch **(D1)** that is coupled between the inductor **(L)** and ground and that is coupled to the first switch **(Q1)**.

Regarding claim 18: Mao et al **(For example: see FIG 1-FIG 5)** discloses power converter wherein the controllable elements inhibits the energy provided by the inductor **(L)** from flowing through the additional current path **(path of Q2)** when the additional current path **(Q2)** is closed.

Regarding claims 10-15: Mao et al **(For example: see FIG 1-FIG 5)** discloses an apparatus at its normal operation performing the steps of method recited in claims 10-15.

Finally, under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. See MPEP 2112.02. Therefore, the previous rejections based upon the apparatus will not be repeated.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mao et al (USP 6,037,755) in view of Irvine et al (USP 6,225,859).

Mao et al discloses claimed invention except for current path comprising a controllable current source. Irvine et al (**FIG 1**) teaches the current path comprising a controllable current source (**1c**). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the power converter of Mao et al to include the controllable current source by Irvine et al the purpose of sinking the current to ground.

Additionally, since Mao et al and Irvine et al are both from the same field of endeavor, the purpose disclosed by Irvine et al would have been recognized in the pertinent art of Mao et al.

6. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mao et al (USP 6,037,755) in view of Schneiderman (USP 4,301,801).

Mao et al discloses claimed invention except for current path as a low impedance path comprising a resistor. Schneiderman (**FIG 2; col. 4, lines 5-8**) teaches the current path as a low impedance path comprising a resistor. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the power converter of Mao et al to include the current path as a low impedance path comprising a resistor by Schneiderman for the purpose of sinking the current to ground.

Additionally, since Mao et al and Schneiderman are both from the same field of endeavor, the purpose disclosed by Schneiderman would have been recognized in the pertinent art of Mao et al.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Erisman (USP 5,402,060) discloses controller for two-switch buck-boost converter and Kitagawa (USP 5,831,418) discloses step-up/down DC-to-DC converter.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Pham whose telephone number is (571)270-3046. The examiner can normally be reached on Mon-Thu (7:00AM - 6:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Lewis can be reached on (571) 272 - 1838. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

January 2010

/Monica Lewis/
Supervisory Patent Examiner, Art Unit 2838
EP

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